

REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-15 are presently active in this case. The present Amendment amends Claims 3, 6, 7 and 10 adds new Claims 11-15 without introducing any new matter.

The outstanding Office Action objected to the abstract because of informalities. The outstanding Office Action rejected Claims 1, 2, 4-6, 8 and 9 under 35 U.S.C. §102(a) as anticipated by Buldhaupt et al. (U.S. Patent No. 6,419,146). Claims 1, 2 and 4-6 were rejected under 35 U.S.C. §102(b) as anticipated by Will et al. (U.S. Patent No. 6,138,898). Claim 7 was rejected under 35 U.S.C. §103(a) as unpatentable over Buldhaupt et al. in view of Sanders (U.S. Patent Publication No. 2002/0179688) and Weisert et al. (U.S. Patent No. 4,220,276). Claims 3 and 10 were rejected under 35 U.S.C. §103(a) as unpatentable over Buldhaupt et al., Sanders and Weisert et al.

In response to the objections to the Abstract, the Abstract of the Disclosure is rewritten to correct the noted informalities. In order to correct an informality, the specification is amended at page 14. In light of their formal nature, the changes to the specification and Abstract do not raise a question of new matter.

In order to vary the scope of protection recited in the claims, new Claims 11-15 are added. New Claims 11-15 find non-limiting support in the disclosure as originally filed, for example in the original claims and at page 13, lines 14-17 with Figs. 5 and 7. Therefore, the changes to the claims are not believed to raise a question of new matter.¹

¹ See MPEP 2163.06 stating that "information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter."

In response to the rejections of the claims under 35 U.S.C. § 102(b) and 35 U.S.C. §103(a), Applicant respectfully requests reconsideration of these rejections and traverses the rejections, as discussed next.

Briefly recapitulating, Applicant's invention, as recited in Claim 1, relates to a method of fabricating a hollow mechanical part by diffusion welding and superplastic forming. The method includes the steps of a) providing at least two primary parts of superplastic material, the primary parts having two faces; and b) depositing an anti-diffusion substance on at least one face of the two faces of the primary parts. The anti-diffusion substance includes a powder and the step b) of depositing the anti-diffusion substance includes *localized sintering of the anti-diffusion substance by the heating from localized application of a laser beam* along a track made up of at least one zone, thereby producing, in the at least one zone, both bonds between the particles of powder and also a diffusion phenomenon between the particles of powder and the material of the at least one face of the primary part.

New independent Claim 14 recites a step of *localized sintering of the anti-diffusion substance by applying a laser beam to the anti-diffusion substance* along a track, thereby fixing the anti-diffusion substance on a face of a primary part.

Turning now to the applied prior art, the Buldhaupt et al. patent discloses a method of joining two superplastic core sheets together into a core pack by laser welding along a pattern of lines. These lines form junction lines between the core sheets when the pack is inflated by gas pressure at superplastic temperatures. However, the Buldhaupt et al. patent fails to teach the claimed method. In particular, and contrary to the statement in the outstanding Office Action at page 3, lines 3-4, the Buldhaupt et al. patent does *not* disclose providing an anti-diffusion substance in a pattern which is locally sintered by laser. On the contrary, the Buldhaupt et al. patent teaches the opposite, i.e., to avoid exposing the stop-off to the laser:

The stop-off, if used, is *carefully excluded* from the region between the sheets 44 and 46 where the hardpoint 40 is to be, since diffusion bonding in that area is desired.²

Therefore, the Buldhaupt et al. patent does not teach the claimed step of sintering the anti-diffusion substance with a laser beam. Accordingly, Applicant respectfully traverses, and requests reconsideration of, the rejection based on the Buldhaupt et al. patent.³

With respect to the Will et al. patent, this reference discloses a method of making an metallic sandwich structure that includes laser welding core sheets having superplastic characteristics into a core pack, which is expanded superplastically. However, the Will et al. patent fails to teach the claimed method. In particular, and contrary to the statement in the outstanding Office Action at page 3, lines 13-14, the Will et al. patent does *not* disclose sintering the anti-diffusion substance with a laser. In the Will et al. method, the anti-diffusion product, or stop-off, is applied only in the zones where it will avoid any welding between the plates by using a mask.⁴ In that respect, the Will et al. method is similar to the Buldhaupt et al. method. Therefore, the Will et al. patent does not teach the claimed step of sintering the anti-diffusion substance with a laser beam, and Applicant respectfully traverses, and requests reconsideration of, the rejection based on the Will et al. patent.

With respect to the Sanders patent, this reference also merely discloses a technique including applying an anti-diffusion product only at specific and desired locations by using the conventional technique of silk screening: "... the stopoff technique, whereby a boron

² See the Buldhaupt et al. patent, column 5, lines 35-39.

³ See MPEP 2131: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," (Citations omitted) (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."

⁴ See the Will et al. patent at column 6, lines 15-48.

nitride or an yttria mixture is applied using silkscreening to the areas of the pack *where bonding is unwanted*.⁵

Similarly, the Weisert et al. patent discloses a method in which the stop-off is only applied at locations of the plates that are not to be welded using a mask and an application of the product by pulverization.⁶

Therefore, even if the combination of the Buldhaupt et al., Sanders and Weisert et al. patents is assumed to be proper, the combination fails to teach every element of the claimed invention. Specifically, the combination fails to teach the claimed step of sintering the anti-diffusion substance with a laser beam. Accordingly, Applicant respectfully traverses, and requests reconsideration of, the rejections based on these patents.⁷

Furthermore, there is no motivation in the prior art to modify the Buldhaupt et al. method, or the other prior art methods, so as to sinter the anti-diffusion substance with a laser beam. The position that the prior art methods *could* be modified to arrive at the claimed inventions would be insufficient to establish a *prima facie* case of obviousness.⁸

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-15 is earnestly solicited.

⁵ See the Sanders patent at column 2, paragraph 31 (emphasis added).

⁶ See the Weisert et al. patent, e.g., at column 1, lines 35-38.

⁷ See MPEP 2142 stating, as one of the three "basic criteria [that] must be met" in order to establish a *prima facie* case of obviousness, that "the prior art reference (or references when combined) must teach or suggest all the claim limitations," (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."

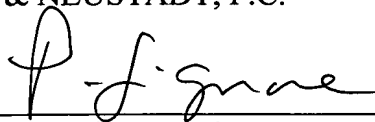
⁸ See MPEP 2143.01 stating that the "fact that references can be combined or modified is not sufficient to establish *prima facie* obviousness"; see also same section stating "[a]lthough a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so,'" (citation omitted).

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Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

Respectfully submitted,

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